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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/522,488	01/26/2005	Takatomo Sasaki	10873.1623USWO	4474

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MINNEAPOLIS, MN 55402

EXAMINER

KUNEMUND, ROBERT M

ART UNIT	PAPER NUMBER
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1792

MAIL DATE	DELIVERY MODE
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03/17/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/522,488

Applicant(s)

SASAKI ET AL.

Examiner

Robert M. Kunemund

Art Unit

1792

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 and 61-64 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 and 61-64 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1 to 6, 9, 18 to 20 and 61 to 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over DiSalvo et al (5,868,837) in view of Kelsey (2002/0158267).

The DiSalvo et al reference teaches a method of growing gallium nitride crystal, note entire reference. In an autoclave, the starting materials are added. The materials include a source of gallium, nitrogen and a flux material, note examples. There is a flux material added to the starting materials. The flux material is sodium and can be other alkaline metal, note examples. The conditions of the autoclave to grow are about 1000c and high pressure. The sole difference between the instant claims and the prior art is

Art Unit: 1792

the addition of metals to the flux. However, the Kelsey reference teaches making gallium nitride where two metals are used in the flux. The metals can be Na, Li, Ca, K, Mg, and Ba, note page 2. It would have been obvious to one of ordinary skill in the art to modify the DiSalvo et al reference by the teachings of the Kelsey reference to use more than one metal as the flux in order to increase the luminescence properties.

Claims 7, 8 and 10 to 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over DiSalvo et al (5,868,837) in view of Kelsey (2002/0158267).

The DiSalvo et al and Kelsey references are relied on for the same reasons as stated, supra, and differs from the instant claims in the nitrogen source and seed. However, in the absence of unexpected results, it would have been obvious to one of ordinary skill in the art to determine through routine experimentation the optimum, operable source and seeds in the DiSalvo et al reference in order to orientate in the desired direction and to lower impurities.

Response to Applicants' Arguments

Applicant's arguments filed January 2, 2008 have been fully considered but they are not persuasive.

Applicants' argument concerning improved results is noted. However, it is unclear as to how one photo shows the entire range as set forth in claim 1. The photo shows only one ratio.

Applicants' argument concerning the combination of references has been considered and not deemed persuasive. The Kelsey reference does teach growing

Art Unit: 1792

gallium nitride by melt with fluxes. This is a similar method as that set forth in the DiSalvo reference. Thus one of ordinary skill in the art would combine references as the Kelsey reference gives motivation to add more than one flux. The art does show that the use of two fluxes will not damage the making of GaN. There is a teaching that one can use two materials as fluxes to make GaN.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert M. Kunemund whose telephone number is 571-272-1464. The examiner can normally be reached on 8 hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on 571-272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Robert M Kunemund
Primary Examiner
Art Unit 1792

Art Unit: 1792

RMK

/Robert M Kunemund/
Primary Examiner, Art Unit 1792